An Introduction to Employment in Main Parts of Tehran Province Based on Output-Input Division

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Abstract: This paper has been done in order to recognize and review the existing job market, to analyze obvious and hidden aspects of unemployment, and to develop employment field in Tehran province. First, by using statistical information and determining economic parts ratio of job market and work force’s divisional transition, the quantity and additive parts of work force for all towns of Tehran province were specified and then the real amount of work force demand was estimated in Iran horizon prospects up to 2025. In this paper, some models were used, based on output-input job market way. They include: the first method was based on employees statistics in economic portion. It consists of shift-share with location-quotient method. The second method input-output is based on production value added, that was used in three main parts such as economy, agriculture, service and industry to evaluate attraction or export of work forces in every town. The research findings show that employment share in agricultural part from 2006 to 2015 encountered 0.1% reduction and from 2016 to 2025 it would face 0.1% amplification. Employment share in industry part increased up to 0.3% and then to 1404 it would encounter 5% reduction. Service sector share in 2006 to 2015 was nearly stable (it decreased to 0.2%). And then from 2015 up to 2025 it continues its increase procedure and reached to 5% growth. Most employment variation is related to the share of service sector. Most location-quotient using employment model is related to Tehran city in service sector and least amount related to Tehran city is in agricultural and industrial part.

Keywords: Tehran province, economic parts, shift share model, location quotient model, output-input model

JEL Classification: J21, R11, R15, N15

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1- Introduction

Economic systems analysts believe the most important indicators of shortage in social welfare include phenomena such as poverty, peasants’ immigration, logistics inequality, environment crisis, inappropriate distribution of social finance, income inequality, and concerns related to the national security. In present days, problems in most countries of the world belong to unemployment, and most governors applied maximum program schedules in employment areas (Ranjbar Fallah et al., 2011). Employment as a financial supply artery is related deeply to all these cases. Therefore, the problem of constant occupation establishment system and decrease, in unemployment in parallel with increase in human state in development process, is of today society’s demands.

The country’s planning system intends to actualize long-term country goals for Iran prospects up to 1404 (2025) in a following decade, with all accomplished programs. The country’s vision that is ahead us can be known as a combination of national will to reach the appropriate universal state, ongoing procedures, and internal or external existing protocols. However events may have negative or positive effects on resolved cases or existing procedure. System’s desire to reach the appropriate universal state and future image before us, in a twenty-year prospect of Islamic republic of Iran was represented especially in employment factor.

Since Tehran province has economic, political and social condition, it requires maximum attention to unemployment problem. Fostering culture or special tendency to employment and planning, policy making on methods and ways of its improvement in order to attract province finance development are of important points in economic programs. Therefore, because of many reasons such as lack of inappropriate job distribution in different economic parts and inequality in salary distribution, dissymmetric economic sources distribution became to existence.

Tehran province with centrality of Tehran and the area of 12981 square kilometer, is located between 34 to 36.5 degree of northern width and 50 to 53 degree of eastern length. This province is limited to Mazandaran province from north and Qom province from south, to Central province from southwest, to Alborz province from west and to Semnan province from east. Tehran province, with more than 12 million people, accounts for 17 percent of the whole country population.

This research is looking for to inquire employment condition in towns located in Tehran province during 2006 to 2015 and 2015 to 2025 using shift-share model. It seeks to predicates this important change for Iran 2025 horizon program. Also by using location-quotient methods - in two states; a: by using statistics on occupation in regions and towns b: by using added value statistics of towns- it evaluates that how work forces of subset towns of Tehran province arrive or leave the area. The main question of this research is looking to answer how would be the changes or analysis of occupation in separating towns of Tehran province in three parts such as agriculture, industry and service applying mentioned coefficient?

This research aims to investigate job creation states in economic parts, evaluate competitive ability of provincial interior in job creation and potential opportunity of production. Therefore, the models that have common usage for this purpose were used. There are some prerequisite of this
research. There are some improper relations among different economic parts of towns in Tehran province to attract or issue work forces while appropriate distribution programs is not accomplished by investment or promoting job quality and quantity inside regional interior. Therefore, the present research inquires necessary contexts for human forces planning in Tehran province towns, and it pays attention to classify the abilities of provincial interior in occupation fields.

2- Literature Review
   a) Foreign Researches
   Evans (2008) from the Agricultural Economics Department of the University of Mississippi, investigated the impact of employment changes in an area, due to the connection with non-economic parameters.

   Singh & Singh (2011) in an article entitled “regional input output table for the state of Punjab” concluded that by using LQ’s methodology, 42 parts of input-output table can be produced for Punjab Province.

   Reveiu & Dardala (2009) used the coefficients of location and share change model for Romania, in order to study quantitative methods for prioritizing. The main purpose of this paper is to provide some methods for assessing the employment status and determining the spatial model of industrial deployment. Using the share change model and the spatial coefficient, they found that the share change model is useful for identifying job creation in each sector.

   Bashford Fernández (2014) in a study titled “A new look at local employment multipliers: Preliminary evidence from Spain” calculated employment in basic and non-basic economy in various job groups.

   Otsuka (2016) investigated regional energy demand by the spatial coefficient in Japan. Industry, construction, and transportation sectors were three studied sectors with locational coefficient.

   b) Iranian Researches

   Karimi & Hasanpour (2009) in an article inquired ranking of small and medium industries in Isfahan province by evaluating competitive profit determinant factor’s action. This research reviews competitive advantage of small and medium industries in Isfahan province in 1996 up to 2005 using complex indicators and by applying location quotient concept.

   Layeghi et al., (2012) in an article about determining value added for agricultural sector in Gross Domestic Product, reviewed value added share and location quotient of Zanjan province and the whole country. In addition, job creation share of this part on whole parts job creation using location quotient was investigated. Moreover, they calculated employment level in agricultural sector and its subsets and production importance with all regions employment has been evaluated. As a result, Zanjan province has a good performance in agriculture sector and it has earned essential relative profit in production and employment sectors.

   Hosseini et al., (2011) in an article entitled “adaptive analysis about relative advantages and job inequality in Khorasan Razavi and country urban areas” determined relative profits of occupation among country’s-urban areas and Khorasan Razavi province. This study used information analysis method applying basic economic model, location and variation quotient.

   Akbari et al., (2013) in an article entitled “job condition analysis of main
economic parts in Kermanshah province),
by applying location quotient indicator,
concluded that improper growth of
employees in Kermanshah province towns
compared to employees in Kermanshah
province derived from dissymmetry in
competitive changes or negative structure
of the towns. The main goal of the research
is reviewing occupation growth of
Kermanshah province towns that they are
strongly affected by provincial economic
activities structure. It was based on basic
and non-basic identification of main
groups of economic activities in Kermanshah
province towns from job condition’s
prospects.

Zangi Abadi & Ahangari (2012)
determined job condition of economic
sectors and groups in town centers of
west Azarbaijan during 1996 up to 2006.
For this purpose, by using shift share
methods, it is undertaken to recognize the
parts with relative advantage. Therefore,
basic sectors that were exporters of work
forces have been characterized using
location quotient.

Azadinejad et al., (2013) introduced
applied technique to codify a regional
input-output table of Khorasan Razavi
province. In this study, in addition to
applying location quotient as a way to
determine location share of different
parts, they specified that location share
method is the most appropriate way to
supply information for economic sectors
of the province.

Lotfi et al., (2013) analyzed relationship
between population and occupation in
Sari town compared to urban areas of the
country in three sectors including agriculture,
industry and service. This study applied
usage of location quotient with shift share
model. Consequently, it is clear that by
reviewing these models, in Sari city an
unbalanced state is seen in triple economic
parts.

Bakhtiari et al., (2013), scheduled
new ways for input-output estimation in
Yazd district. 33 cases reviewing parts
were evaluated in new models. Among
quotients of SLQ, ACILQ, CILQ, FLQ,
the quotient ACILQ can be an appropriate
standard to develop national coefficient
into regional coefficient. It is useful for
small regions.

3- Theoretical Framework

Solving unemployment problem and
job creation in the whole country are the
most important governments’ duties.
However, balanced and constant job
creation in Tehran province is permanently
emphasized in order to have an appropriate
economic growth with development
programs and to design a coherent and
practical planning by government.
Therefore, efforts to take effective steps
that underlie employment are undeniable
necessity by the government and Supreme
Council of Employment.

Traditional theorists of economics did
their best mainly for analyzing production
economy (agriculture, industry and mining).
These scientists thought about service
mostly as a shape of financial service and
pointed out to the unproductive nature of
the services. In past, service sector was
not taken seriously by early economists.
But today, with more urbanization
development, it became the main principle
of economic activities in all countries
around the world, and specially in
developed countries with a paralleled
relation to other economic parts has had a
growth and dedicated main part of added
values of these countries to itself. It is
remarkable that an event took place in
Iran was job increase in service sector,
without dependence to growth in industry or agriculture parts. Therefore, service occupation in Iran benefits from an unstable job creation structure. As a result, development in broking markets is derived from underground or shadow economy activities. It decreases share of agricultural or industrial sectors from employment and dedicates it to itself.

The issue of employment and its complexities in our society attract many experts or governors attention to itself. Economic sectors are considered as pillars of development in any area. The growth of economic parts indicates progress for any area. Enjoying specific goals for economic activities in any place characterizes progress for that place in one special economic field. (Zangi Abadi & Ahangari 2012).

One of the most important essences of production process in economy is workforce, and occupation of work force is of great importance for economic policy makers. In addition, job creation is considered as an important goal for them. In Iran, due to its economic structure, unemployment has been regarded as an economic problem in different periods, and job creation is considered in different parts for the governors in macro policy making of the country. This policymaking was intensely based on increase in job creation in different parts (Jalali Esfand Abadi & Javidan 2010).

Statistical Center of Iran in its demography system, defines work force presentation or active parts, in this way: active economic crowd include people older than 10 years that participate in goods or service product (employed) or regardless of their abilities they do not participate in any areas (unemployed). In fact, numbers of active crowd indicate those who are able to present their work force to the job market and they are divided in two employed and unemployed groups. Employed group, based on definition, is a part of active ones that work at least one hour a week. There are several definitions about unemployment. In one definition, unemployment happens in conditions that active ones mainly have no economic activities. In other words, unemployment takes place when work force presentation is more than its demand. In fact, unemployment is an involuntary long-term gap when it is not easy to attain new job. (Statistical Calendar of Tehran Province, 2013).

Statistical Center of Iran definition in demography system of an unemployed is as follow: unemployed are regarded the ones who are more than 10 years that do not have any jobs (no self-employment or salaried workers) or are ready to work (ready for being paid salary or self-employment) job quester (it accomplished personal action looking for salary occupation or self-employment. (Tehran Province Annual Calendar 2013). Moreover, the ones who do not look for a job because they would start new job in future or waiting to return back to their earlier jobs,
and they do not have a job and also ready for job and are considered unemployed. (Hassani, 2015).

One of the most important macroeconomic parameters include employment. Any variation in this parameter has its effect on other economic parameters. Occupation is main requirements of the society. In addition, any incompetence or shortage causes many economic, social or cultural abnormalities, that are affected by some different reasons. (Mohammadi et al 2013).

Today, the role of employment on life mobility is obvious for everyone. This means that many problems and difficulties in urban societies derived from ill being structure of the occupation. On the other hand, employment and inequalities are two associated or interdependent things together. Unequal job opportunities in different regions cause several inequalities in other development categories. Moreover, development inequalities among regions cause imbalance or disequilibrium in creating job opportunities. Therefore, some regions are more developed and some regions are prevented from developing and it causes imbalance in our city system of the country during long term. Therefore recognizing job condition of different parts of the country for programming and aware interfering in this field is of special significance. (Zangi Abadi & Ahangari 2012).

Tehran province for its economic and political state benefits that always is considered as a center for planning and decision making of the country, is on superior country condition in investment attractiveness and opportunities. In this regard, inquiring job degree, produced added value and tendency for investment in different parts of the province suggest service sector has a job creation share of 61 percent, industry, mining and building 38 percent as a second attractive part for employed and suppliers, and it consists a large amount of great projects. The third part is agriculture that has less than 2 percent share (Annual Yearbook of Tehran Province, 2013). For this reason, inquiring job creation share of main economic parts of Tehran province is of great importance using shift share and location quotient model (applying job data and value added) in order to evaluate their performance and effects.

### 4- Research Method

This research is limited to Tehran province and its subset towns. Thus, statistical information of 2006 to 2012 written in demography of Tehran province and tables about Iran’s national accounts (regional accounts) that produced by Statistical Center of Iran, in a research based on library-evidence methods, analyzed the subject. In terms of purpose, this research is applied, and by normal shift share methods, it analyzed job condition and main economic activities groups in Tehran province centers. Meanwhile, it inquires entrance and exit of work force in three main sectors based on introduced ways. Then, it pays attention to estimate work force demands. In addition, by using methods expressed as follows, it presents research finding in calculated tables.

**Shift Share Model (S-S)**

Shift share is a standardized regional analysis method to determine the amount of job growth in towns compared to the province as a whole. In fact, shift share is a method to measure competitiveness of different economic sectors in a region. This method at first has been used in one period to analyze job variation in a region. This method is useful for response to
measuring job rise or fall procedure in agriculture, industry and service sectors.

This pattern is a picture of economic parts places in the region. In addition, it is an analysis for increasing effects or growth reduction of town as a measurement to the province. Moreover, it is affected by job procedure variation in those parts. Traditional analysis of share transition has been used in four classifications: national or regional growth, the impact of economic sectors, expectation changes, and regional advantage condition.

This model contains three main indicators: entire growth of province (RS), relative growth of economic sectors in town in respect with the economy of province (EM), relative performance of each part in town in respect with the performance of that part in province (CS).

-Entire Growth of Province (Regional Share), (RS)

This indicator is a standard of job growth in one period (2006-2015) and includes:

\[ RS = \frac{E_i^{yn}}{E_i^{yb}} - 1 \]  

\( E_i^{yn} \): is town employment in special economic sector of the town in current year (2015)  
\( E_i^{yb} \): town occupation in special economic part in basic year (2006)

-Entire Growth Share Economic Sectors of Town in the Economic Total Province (Economic Mix), (EM)

This indicator for growth or decrease of employment in the sector of total province includes:

\[ EM = \frac{E_i^{yn}}{E_i^{yb}} - \frac{E_r^{yn}}{E_r^{yb}} \]  

\( E_r^{yn} \): The employment of town in the sector special economy in current year (2015)  
\( E_r^{yb} \): The employment of town in the sector special economy in current base (2006)

-Each Sector of Performance Indicator, Town of Province’s (Country Share, CS)

\[ CS = \frac{E_i^{yn}}{E_i^{yb}} - \frac{E_r^{yn}}{E_r^{yb}} \]  

\( E_i^{yn} \): The employment of town in the sector economy in current year (2015)  
\( E_i^{yb} \): The employment of town in the sector economy in current year (2006)

Sum estimation of three equation (RS, EM, CS) in order to measure variation and predict job condition for one period is as follows:

\[ \text{Sum of Triple Indicators} \]  
\[ E_i^{yt} = E_i^{yn} + \Delta E_i^{yb-yn} \]  
\( E_i^{yt} \): numbers of estimated employees for future period.

\( E_i^{yn}, E_i^{yb}, \Delta E_i^{yb-yn}, E_i^{yt} \) are the numbers of employees in every parts.

Location Quotient in Models L-Q and I-O

The use of Location quotient index at tow follow structure includes:

Location quotient indicator is considered as an outcome of production in one region in different economic activities compared to the greater region of that province or the country using numbers of employees. In this indicator, variables such as value added regional, regional production extent, employment total, investment amount, in same economic activity are measured in respect of the whole province and some activities that consist productive specialty are highlighted. It is remarkable that in
this coefficient instead of using numbers of employees we can use Rial value added numbers as a standard of proficiency in town production compared with the province as a productive share or a share resulted from value added.

\[ LQ_i = \frac{\sum E_i}{\sum E_r} \] (7)

\( LQ_i \): It is a location quotient of employment or town value added in every economic part.

\( E_i \): It Is an employment (value added) in a considered part of a town

\( \sum E_i \): Is an employment (value added) in total town economy

\( E_r \): Is an employment (value added) in a considered part of a town

\( \sum E_r \): Is an employment (value added) in the total province economy

Since in this research, towns of Tehran province economic activities have been measured, therefore analysis and evaluation of location quotient are as three following models.

- If \( LQ>1 \), The considered town would consist more productive specialty in that specific activity compared to the entire province.

- If \( LQ=1 \), Productive specialty of a town and the entire province in specific activity would be the same.

- If \( LQ<1 \), A town in that specific activity has less productive specialty compared with entire province.

Results of these three stages can characterize existing condition of Tehran province economic structure and relative advantage of every economic parts of them in each main economic activities (service, industry, agriculture).

\( a) \) Employment Structure

In this structure \( LQ_1 \) is used as a requirement indicator or work forces export.

\[ LQ_1 = \frac{\text{entire employment in } i \text{ part of a town}}{\text{entire employment of a } j \text{ region}} \] (8)

\( b) \) In Value Added Structure

In this structure, economic activities that had better performance in creating value added would be recognized and are proposed to develop economic-social welfare. Therefore, \( LQ_2 \) is used as an indicator for input- output method in these activities.

\[ LQ_2 = \frac{\text{entire value added in } i \text{ region of a } j \text{ town}}{\text{entire value added in a } j \text{ town}} \] (9)

5- Research Findings

In 2013, based on statistical results of Tehran province work forces, 36.6 percent of population are more than 10 years old and considered mostly active. Unemployment rate in this group is 9.9 percent. Relative distribution of employed in three main economic activities includes 1.5 percent in agriculture sector, 37.4 percent in industry and 61.1 percent in service sector.

Table 1 shows the number of employed in main activity sectors, by town separating in 2006 and 2015. Statistical employment procedure was selected in 2006 as an earlier \((t-1)\) that has 9 years distance. Therefore, with statistical estimation, nine years later meaning 2025 as a predictive year \((t+1)\) can create time distance balance. Current year is regarded as a mediate \((t)\).
Table1. Number of employed in main activity sectors by town separating

<table>
<thead>
<tr>
<th>Town</th>
<th>The base year (2006), (t-1)</th>
<th>The current year (2015), t</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agriculture</td>
<td>Industry</td>
</tr>
<tr>
<td>Islamshahr</td>
<td>2350</td>
<td>45186</td>
</tr>
<tr>
<td>Baharestan</td>
<td>2546</td>
<td>48947</td>
</tr>
<tr>
<td>Pakdasht</td>
<td>1542</td>
<td>29633</td>
</tr>
<tr>
<td>Pishva</td>
<td>376</td>
<td>7231</td>
</tr>
<tr>
<td>Tehran</td>
<td>43227</td>
<td>830936</td>
</tr>
<tr>
<td>Damavand</td>
<td>525</td>
<td>10093</td>
</tr>
<tr>
<td>Robatkarim</td>
<td>996</td>
<td>19136</td>
</tr>
<tr>
<td>Rey</td>
<td>1682</td>
<td>32337</td>
</tr>
<tr>
<td>Shemiranat</td>
<td>246</td>
<td>4734</td>
</tr>
<tr>
<td>Shahriyar</td>
<td>3085</td>
<td>59307</td>
</tr>
<tr>
<td>Firoozkooh</td>
<td>212</td>
<td>4070</td>
</tr>
<tr>
<td>Qods</td>
<td>1423</td>
<td>27353</td>
</tr>
<tr>
<td>Malard</td>
<td>1829</td>
<td>25148</td>
</tr>
<tr>
<td>Varamin</td>
<td>2476</td>
<td>47589</td>
</tr>
<tr>
<td>Sum</td>
<td>62515</td>
<td>1201709</td>
</tr>
</tbody>
</table>

Reference: (Statistical Center of Iran)

Statistical tables (2) and (3), are calculated based on written relations in shift share method. In these calculations, employment structure variation of Tehran province towns is as following.

RS quotient shows employment growth in entire Tehran province economy since 2006 to 2015 as RS=0.143 equals to 14.3. This coefficient is the employment growth of entire Tehran province.

EM Coefficient, during 2006 to 2015, shows positively the growth related to agriculture and service sectors. Positive mark of these coefficients for both agriculture and industry sectors are a reason for employment progress in mentioned sectors. In industry EM= 0.042 is higher than EM=0.004 in service sector. However both quotient show small amount low growth (4 percent in agriculture and 0.4 percent growth in service sector). In addition, this small growth in agricultural part is of importance. EM quotient is negative for industry part. Employment decrease in two inquired cases indicates wane of this part and is one of ordinal challenge over Tehran province industries. (EM=-0.009 equals to -0.9% which is a number showing less than 1 percent, although it is too small but it implies recession and degradation of this part.

The third variable is CS or competitive situation of every cities compared with the province in economic part. In agricultural sector of towns Shahriyar, Varamin and Shemiranat, they have positive quotient and it indicates that both cities in agricultural part attracted work forces and other towns lost their work forces. In industry, Islamshahr, Qods, Malard, and Firoozkooh towns have a negative quotient. It indicates that both cities in industry have lost their work forces and other towns have had employment growth in industry.

In service sector, except Islamshahr, Damavand, and Firoozkooh, other towns are positive and ascending and have a growing employment.

Also it is seen in the last column of every economic part of table 2 that three parameters of RS, EM, CS are added together and it shows the sum of these three quotients.
Table 2. Quotients of economic condition in shift share model (2006_2015)

<table>
<thead>
<tr>
<th>Town</th>
<th>RS</th>
<th>Agriculture</th>
<th>Industry</th>
<th>Service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EM</td>
<td>CS</td>
<td>EM</td>
<td>CS</td>
</tr>
<tr>
<td>Islamshahr</td>
<td>0.143</td>
<td>0.042</td>
<td>-0.00039</td>
<td>0.1821596</td>
</tr>
<tr>
<td>Baharestan</td>
<td>0.143</td>
<td>0.042</td>
<td>-0.00033</td>
<td>0.18427479</td>
</tr>
<tr>
<td>Pakdasht</td>
<td>0.143</td>
<td>0.042</td>
<td>-0.00115</td>
<td>0.18345817</td>
</tr>
<tr>
<td>Pishva</td>
<td>0.143</td>
<td>0.042</td>
<td>-0.00006</td>
<td>0.18400319</td>
</tr>
<tr>
<td>Tehran</td>
<td>0.143</td>
<td>0.042</td>
<td>-0.00005</td>
<td>0.18456566</td>
</tr>
<tr>
<td>Damavand</td>
<td>0.143</td>
<td>0.042</td>
<td>-0.0007</td>
<td>0.18389174</td>
</tr>
<tr>
<td>Robatkarim</td>
<td>0.143</td>
<td>0.042</td>
<td>-0.0023</td>
<td>0.18233695</td>
</tr>
<tr>
<td>Rey</td>
<td>0.143</td>
<td>0.042</td>
<td>-0.000005</td>
<td>0.18460404</td>
</tr>
<tr>
<td>Shemiranat</td>
<td>0.143</td>
<td>0.042</td>
<td>0.0406</td>
<td>0.22521578</td>
</tr>
<tr>
<td>Shahriyar</td>
<td>0.143</td>
<td>0.042</td>
<td>-0.00111</td>
<td>0.18472218</td>
</tr>
<tr>
<td>Firuzkooh</td>
<td>0.143</td>
<td>0.042</td>
<td>-0.0026</td>
<td>0.18199596</td>
</tr>
<tr>
<td>Qods</td>
<td>0.143</td>
<td>0.042</td>
<td>-0.00048</td>
<td>0.18413402</td>
</tr>
<tr>
<td>Malard</td>
<td>0.143</td>
<td>0.042</td>
<td>-0.00052</td>
<td>0.18408753</td>
</tr>
<tr>
<td>Varamin</td>
<td>0.143</td>
<td>0.042</td>
<td>0.0001</td>
<td>0.18471642</td>
</tr>
</tbody>
</table>

Total written values in this column are positive (except industry sector related to three towns such as Islamshahr, Damavand, Firuzkooh) and are the reasons for employment progress in inquiring period of related towns. It is remarkable the highest quotient in agriculture, industry and service respectively belong to towns like Shemiranat, Damavand, and the least quotient related to these parts respectively belong to towns like Firuzkooh, Damavand, and Islamshahr. Therefore, the most attraction is related to service sector and agriculture is on the second grade.

Table (3) has been adjusted in two parts. In the first part that is related to past changes, it shows quantitative rate of employees in three main economic sectors of the province and towns in separating form. Only Islamshahr town encounters with decrease in industrial attraction. Damavand and Firuzkooh have such a problem in service sector.

After calculating RC, EM, CS, quotients, now it is time for calculating job prediction. In addition, we can get the results by multiplying sum of these quotients in numbers of employees in same parts. In fact, the second part of table (3) indicates prediction of employment amount in a following nine-year period. Moreover, it is in accordance with Iran horizon prospect in 2025. Tehran city will have most job creation in service sector with number 1898577 for year 2025.
### Table 3. Variation and prediction of employment

<table>
<thead>
<tr>
<th>Town</th>
<th>The Change (2006-2015), Periods (t-1) until t</th>
<th>The prospect of year 2025, (2025)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agriculture</td>
<td>Industry</td>
</tr>
<tr>
<td>Islamshahr</td>
<td>477</td>
<td>-2479</td>
</tr>
<tr>
<td>Baharestan</td>
<td>517</td>
<td>243</td>
</tr>
<tr>
<td>Pakdasht</td>
<td>311</td>
<td>146</td>
</tr>
<tr>
<td>Pishva</td>
<td>76</td>
<td>36</td>
</tr>
<tr>
<td>Tehran</td>
<td>8789</td>
<td>4101</td>
</tr>
<tr>
<td>Damavand</td>
<td>106</td>
<td>52</td>
</tr>
<tr>
<td>Robatkarim</td>
<td>199</td>
<td>95</td>
</tr>
<tr>
<td>Rey</td>
<td>342</td>
<td>160</td>
</tr>
<tr>
<td>Shemiranat</td>
<td>63</td>
<td>24</td>
</tr>
<tr>
<td>Shahriyar</td>
<td>628</td>
<td>292</td>
</tr>
<tr>
<td>Firoozkooh</td>
<td>42</td>
<td>19</td>
</tr>
<tr>
<td>Qods</td>
<td>289</td>
<td>134</td>
</tr>
<tr>
<td>Malard</td>
<td>371</td>
<td>171</td>
</tr>
<tr>
<td>Varamin</td>
<td>504</td>
<td>235</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Research Findings with Location Quotient in Models L-Q, I-Q

Location quotient calculates employment rate by using average employed proportion of town in any economic sector to the average employed proportion in the same region of the province. For these quotient, LQ_1, LQ_2 relations were used.

In table 4, location quotient is calculated in employment structure. In this table, we can see location quotient of Islamshahr for 2006 was equal to 1 and this town is self-sufficient in job creation. Towns that have location quotient higher than 1, are considered job exporters in different economic sectors such as Tehran which is a work force exporter in service sector and in agricultural and industrial part is an importer. This process was repeated for 2015 in Tehran and other towns have written numbers inserted to this table.

### Table 4. Location quotient in employment structure

<table>
<thead>
<tr>
<th>Town</th>
<th>Location quotient of year 2006, old period, (t-1)</th>
<th>Location quotient of year 2015, current period, (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agriculture</td>
<td>Industry</td>
</tr>
<tr>
<td>Islamshahr</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Baharestan</td>
<td>0.83</td>
<td>1.003</td>
</tr>
<tr>
<td>Pakdasht</td>
<td>1.026</td>
<td>0.995</td>
</tr>
<tr>
<td>Pishva</td>
<td>1.031</td>
<td>1.016</td>
</tr>
<tr>
<td>Tehran</td>
<td>0.57</td>
<td>0.984</td>
</tr>
<tr>
<td>Damavand</td>
<td>0.97</td>
<td>0.95</td>
</tr>
<tr>
<td>Robatkarim</td>
<td>0.98</td>
<td>0.99</td>
</tr>
<tr>
<td>Rey</td>
<td>0.93</td>
<td>1.019</td>
</tr>
<tr>
<td>Shemiranat</td>
<td>0.95</td>
<td>1.022</td>
</tr>
<tr>
<td>Shahriyar</td>
<td>1.031</td>
<td>1.003</td>
</tr>
<tr>
<td>Firoozkooh</td>
<td>0.96</td>
<td>1.024</td>
</tr>
<tr>
<td>Qods</td>
<td>1.021</td>
<td>1.01</td>
</tr>
<tr>
<td>Malard</td>
<td>0.87</td>
<td>1.022</td>
</tr>
<tr>
<td>Varamin</td>
<td>0.97</td>
<td>1.01</td>
</tr>
<tr>
<td>Total</td>
<td>0.94</td>
<td>1.003</td>
</tr>
</tbody>
</table>
In table (5), location quotient is calculated in added value structure. In this table, value added of towns is shown in different economic parts. Also location quotient is calculated for year 2015. As it is seen the most location quotient in agriculture belongs to Pishva town and the least one belongs to Tehran. In addition, in industrial sector, the highest value belongs to Shemiranat and the least one belongs to Tehran. In fact, Tehran city in agricultural and industrial parts is importer from other towns and in service sector the most numbers is for Tehran and it is an exporter and the least one is for Shemiranat.

Table 5. Location quotient in dividing forms for towns and by using value added share of economic part

<table>
<thead>
<tr>
<th>Town</th>
<th>value added, (million Rial’s), for year 2015</th>
<th>location quotient of year 2015, uses value added method’s</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agriculture</td>
<td>Industry</td>
</tr>
<tr>
<td>Islamshahr</td>
<td>4089243</td>
<td>28625953</td>
</tr>
<tr>
<td>Baharestan</td>
<td>4553930</td>
<td>32204197</td>
</tr>
<tr>
<td>Pakdasht</td>
<td>3438682</td>
<td>22811307</td>
</tr>
<tr>
<td>Pishva</td>
<td>2602246</td>
<td>20127623</td>
</tr>
<tr>
<td>Tehran</td>
<td>3996306</td>
<td>100638117</td>
</tr>
<tr>
<td>Damavand</td>
<td>1695183</td>
<td>21916746</td>
</tr>
<tr>
<td>Robatkarim</td>
<td>3066933</td>
<td>25494989</td>
</tr>
<tr>
<td>Rey</td>
<td>3578088</td>
<td>27284112</td>
</tr>
<tr>
<td>Shemiranat</td>
<td>2509309</td>
<td>25942270</td>
</tr>
<tr>
<td>Shahriyar</td>
<td>4600399</td>
<td>37571564</td>
</tr>
<tr>
<td>Firoozkooh</td>
<td>2462840</td>
<td>21022184</td>
</tr>
<tr>
<td>Qods</td>
<td>3392214</td>
<td>33993320</td>
</tr>
<tr>
<td>Malard</td>
<td>3671025</td>
<td>28178673</td>
</tr>
<tr>
<td>Varamin</td>
<td>1812278</td>
<td>21469465</td>
</tr>
<tr>
<td>Sum</td>
<td>46468676</td>
<td>447280520</td>
</tr>
<tr>
<td>Total province</td>
<td>2257711563</td>
<td></td>
</tr>
</tbody>
</table>

Comparisons of written calculation in table number 4 and 5 indicate that average numbers related to location quotient $LQ_1$ job method is as follow: $(0.94, 1.003, 0.996)$, and in value added method $LQ_2$ is: $(1.47, 1.28, 0.92)$. Difference in agricultural part with two others is completely obvious (industry and service) in computed location quotient. In addition, computed quotients using value added and employee numbers models for two industry and service part indicates straight direction. In fact industrial and service parts benefits from harmony and one sided way in calculating.
location quotient model that is based on value added and location quotient based on employee numbers in main economic parts.

6- Conclusion and Discussion

Inquiring ordinal challenges on job market, drawing ideal prospect and determining goals, solutions and practical programs in employment field of Tehran province for an appropriate time horizon is a suitable pattern of making decisions on policy making of job market and it also improves an effective entity framework in job market development. Tehran province benefits from potential and actual in human work forces encountered recently with serious challenges in this area. Lack of data clarity of inter-regional work force transition procedure, nonexistence of determining human needs in economic sectors and also lack of presenting information based on determining exact share of economic activists in job market and lack of research about determining regional position of employment all imply these problems. Therefore, the present article, by reviewing grounds and process related to work force of Tehran, inquires earlier conditions and presents a future horizon of job market in main agricultural, industrial and service sectors of the provincial regions. In addition, its achievements are as following:

- In last census of population in 2011, Tehran population was more than 12 million people. It had 3239109-employee population in 2006 and it had 3702753-employee population in year 2015. Prediction of employee population for 2025 would be 4194074 people.

- Used basis method in this research is output-input inter-regional work force and it was presented in two parts: a) shift share method b) location quotient method. Shift share method used statistic based on employee of different economic sectors while location quotient method is presented in two different state of used statistic way. Used statistic in location quotient in the first state is based on employee numbers census and the second state is based on statistic about value added. Acquired calculation results with mentioned methods are as followings:

  - Total employment growth in 2006 to 2015 is 1.4% (RS quotient). Sum of three quotients (RS+EM+CS) that indicates total employment variation shows that 8789 numbers of working people are added to agriculture sector in Tehran. In industry sector, 4101 numbers, and in service sector 343412 numbers of people would experience employment. In Damavand and Firoozkooh, number of working individuals would be diminished. In addition, industry sector of Islamshahr encounters with reduction in working ones.

  - Location quotient (LQ₁) that was chosen with the number of working ones to evaluate export, import procedures and it is compared with quotient 1. It shows in Tehran province that in 2006, Tehran had quotient of 0.57 and it was dependent on agricultural import, export products. This criterion was reduced in 2015 to 0.39 and it shows this dependence in an additive way. It is notable that service share increased from 1.024 in 2006 to 1.0312 in 2015 and it ranked first in the province. In fact, the city of Tehran ranked first in service export and first grade in agricultural sector product.

  - Location quotient (LQ₂) is related with value added. In addition, it uses Rial value added which indicates inter-regional products, to compare economic sectors in
their production abilities. In agricultural sector, Pishva ranked first and Tehran ranked the last one. In industry sector, Shemiranat is in the first grade and Tehran is in the last one, in service sector Tehran is in first rank, and Shemiranat is in the last one.

-Tehran province has employment sector in agriculture respectively 1.93%, 1.86% in 2006 and 2015. It reaches to 1.94 in 2025. In last ten years, it reduced partly in agriculture sector and we expect this share increases a few amount by 2025. This increasing procedure can be because of many reasons including decrease in other sectors.

- In industry sector, Tehran province in 2006 and 2015 is 37% and 37.4% respectively and it reaches to 31.9% in 2025. In fact, in 2006 up to 2015, employment share in industry sector increased partly and it is expected this procedure decreases 5 percent in employment from 2016 to 2025.

-Tehran province has employment share of 60.97%, 60.7% in service sector in 2006 to 2015 and it reaches to 65 percent by 2025. In fact, in last 10 years (2006 to 2015) employment share in service sector decreased 0.13 percent and it is expected in 2016, this share increased 5 percent up to 2025. This increasing procedure can be due to many reasons including decrease in industrial sector share.

- By using calculative methods it is seen that:

Location quotient uses statistics to calculate numbers of working people in 2015 for industrial, agricultural, and service sectors. It indicates 0.94, 1.003 and 0.996 respectively. Moreover, it shows Tehran’s ability to export work forces of industrial part and the requirement of work forces entrance to agricultural sector. Also, we can observe calculative location quotient by using value added for agricultural, industrial and service sectors that are respectively 1.47, 1.28 and 0.92. Tehran’s ability in producing potential from agricultural sector is in the first rank and then industry and service sectors arranged respectively.

We should consider that in Iran horizon of 2025, employment share in industry sector in this province is less than 5 percent of current numbers. In addition, by noticing employment increase in agricultural sector, it is less than 1 percent, job market tendency to service sector and employment decrease in industrial sector is not a good promise for the job market. Job market planners should be careful that Tehran province is considered as an effective province on macroeconomic of the country and also other sectors of it. In addition, it can determine political goals and Iran horizon 2025. Based on the findings of this paper, the following suggestions for policy makers of the economic system are presented in order to properly and appropriately distribute the employed population in productive economic activities and to bridge the gap between economic sectors, which is a step towards the elimination of the unemployment crisis and the achievement of sustainable value added:

1- The employment inequality coefficients among the cities of Tehran indicate that the policies of land use planning and the balance of population, space, and activity relations have not been very successful at the highest level of implementation of macro policies in the capital; accordingly, to prevent the acceleration of inequality inside the province, the policy of the development of middle towns and cities, and the
An Introduction to Employment in Main Parts of Tehran Province

Attention to the redistribution of justice and employment and business, should be placed on the agenda in the executive and legislative bodies.

2- Government credits and investments should be directed in the agricultural sector of Tehran province, because this section has a significant impact on increasing employment, developing green space and reducing existing pollutants and using recyclable surface water and sewage resources to improve space. On the one hand, it can be useful in reducing the waste of water resources, attracting funds to agricultural productive sectors, reducing the inequality between economic sectors, both from the point of view of employment and income, and, on the other hand, it can absorb manpower and non-productive resources in service or industry sectors.

3- The service sector in Tehran metropolitan area, although having a high job creation rate, over reliance on this sector to maintain employment can, in the long run, make it difficult for the economy of Tehran to run. In fact, reducing the focus of the services sector from Tehran as the center of the province and the capital of Iran and its distribution in all provinces of the country is a potential development for reducing population density in Tehran and regional balanced development.

7- References
Karimi, F., & Hasanpoor, Y. (2009). Ranking the Small and Medium Industries of


